

SEQUENCE LISTING

<110> Luche, Ralf M.
Wei, Bo

<120> DSP-3 DUAL-SPECIFICITY PHOSPHATASE

<130> 200125.408C2

<140> US

<141> 2003-09-08

<160> 26

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 926

<212> DNA

<213> Homo sapien

<400> 1

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gctagcggttc gccttcagcc accatgggga atgggatgaa caagatcctg cccggcctgt      120
acatcggcaa cttcaaagat gccagagacg cggaacaatt gagcaagaac aaggtgacac      180
atattctgtc tgtccacgat agtgccaggc ctatgttgga gggagttaa tacctgtgca      240
tcccagcagc ggattcacca tctcaaaacc tgacaagaca ttcaaagaa agtattaaat      300
tcattcacga gtgccggctc cgcggtgaga gctgccttgt acactgcctg gccggggtct      360
ccaggagcgt gacactggtg atcgcatata tcatgaccgt cactgacttt ggctgggagg      420
atgccctgca caccgtgctg gctgggagat cctgtgcaa cccaacgtg ggcttccaga      480
gacagctcca ggagtttgag aagcatgagg tccatcagta tcggcagtg ctgaaggagg      540
aatatggaga gagccctttg caggatgcag aagaagccaa aaacattctg gccgctccag      600
gaattctgaa gttctgggcc tttctcagaa gactgtaatg tacctgaagt ttctgaaata      660
ttgcaaaacc gcagagttta ggctgggtgct gccaaaaaga aaagcaacat agagtttaag      720
tatccagtag tgatttgtaa acttgttttt catttgaaag tgaatatata cgtagtcatg      780
tttatgttga gaactaagga tattcttttag caagagaaaa tattttcccc ttatccccac      840
tgctgtggag gtttctgtac ctgccttgga tgctgtgaag gatcccgga gccttgccgc      900
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<210> 2

<211> 184

<212> PRT

<213> Homo sapien

<400> 2

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Met Gly Asn Gly Met Asn Lys Ile Leu Pro Gly Leu Tyr Ile Gly Asn
 1           5           10           15
Phe Lys Asp Ala Arg Asp Ala Glu Gln Leu Ser Lys Asn Lys Val Thr
 20           25           30
His Ile Leu Ser Val His Asp Ser Ala Arg Pro Met Leu Glu Gly Val
 35           40           45
Lys Tyr Leu Cys Ile Pro Ala Ala Asp Ser Pro Ser Gln Asn Leu Thr
 50           55           60
Arg His Phe Lys Glu Ser Ile Lys Phe Ile His Glu Cys Arg Leu Arg

```

```

65          70          75          80
Gly Glu Ser Cys Leu Val His Cys Leu Ala Gly Val Ser Arg Ser Val
      85          90          95
Thr Leu Val Ile Ala Tyr Ile Met Thr Val Thr Asp Phe Gly Trp Glu
      100        105        110
Asp Ala Leu His Thr Val Arg Ala Gly Arg Ser Cys Ala Asn Pro Asn
      115        120        125
Val Gly Phe Gln Arg Gln Leu Gln Glu Phe Glu Lys His Glu Val His
      130        135        140
Gln Tyr Arg Gln Trp Leu Lys Glu Glu Tyr Gly Glu Ser Pro Leu Gln
145      150      155      160
Asp Ala Glu Glu Ala Lys Asn Ile Leu Ala Ala Pro Gly Ile Leu Lys
      165      170      175
Phe Trp Ala Phe Leu Arg Arg Leu
      180

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<210> 3
<211> 10
<212> PRT
<213> Homo sapien

```

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<400> 3
Val His Cys Leu Ala Gly Val Ser Arg Ser
  1          5          10

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<210> 4
<211> 23
<212> PRT
<213> Homo sapien

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```

<400> 4
Gly Arg Val Leu Val His Cys Gln Ala Gly Ile Ser Arg Ser Gly Thr
  1          5          10          15
Asn Ile Leu Ala Tyr Leu Met
      20

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<210> 5
<211> 24
<212> DNA
<213> Artificial Sequence

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<220>
<223> Primer used to obtain full length cDNA encoding
      DSP-3

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<400> 5
gacctcatgc ttctcaaact cctg

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24

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<210> 6
<211> 21
<212> DNA
<213> Artificial Sequence

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<220>
<223> Primer used to obtain full length cDNA encoding
      DSP-3

```

<400> 6
 cgatcaccag tgtcacgctc c 21
 <210> 7
 <211> 26
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Primer used to obtain full length cDNA encoding
 DSP-3
 <400> 7
 cagaatatgt gtcaccttgt tcttgc 26
 <210> 8
 <211> 26
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Primer used to obtain full length cDNA encoding
 DSP-3
 <400> 8
 gcaagaacaa ggtgacacat attctg 26
 <210> 9
 <211> 28
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Primer used to obtain full length cDNA encoding
 DSP-3
 <400> 9
 gggaatggga tgaacaagat cctgcccg 28
 <210> 10
 <211> 37
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Primer used to obtain full length cDNA encoding
 DSP-3
 <400> 10
 cagtcttctg agaaaggccc agaacttcag aattcct 37
 <210> 11
 <211> 170
 <212> PRT
 <213> Homo sapien
 <400> 11

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Ser Asp Leu Asp Arg Asp Pro Asn Ser Ala Thr Asp Ser Asp Gly Ser
 1      5      10      15
Pro Leu Ser Asn Ser Gln Pro Ser Phe Pro Val Glu Ile Leu Pro Phe
      20      25      30
Leu Tyr Leu Gly Cys Ala Lys Asp Ser Thr Asn Leu Asp Val Leu Glu
      35      40      45
Glu Phe Gly Ile Lys Tyr Ile Leu Asn Val Thr Pro Asn Leu Pro Asn
      50      55      60
Leu Phe Glu Asn Ala Gly Glu Phe Lys Tyr Lys Gln Ile Pro Ile Ser
65      70      75      80
Asp His Trp Ser Gln Asn Leu Ser Gln Phe Phe Pro Glu Ala Ile Ser
      85      90      95
Phe Ile Asp Glu Ala Arg Gly Lys Asn Cys Gly Val Leu Val His Cys
      100      105      110
Leu Ala Gly Ile Ser Arg Ser Val Thr Val Thr Val Ala Tyr Leu Met
      115      120      125
Gln Lys Leu Asn Leu Ser Met Asn Asp Ala Tyr Asp Ile Val Lys Met
      130      135      140
Lys Lys Ser Asn Ile Ser Pro Asn Phe Asn Phe Met Gly Gln Leu Leu
145      150      155      160
Asp Phe Glu Arg Thr Leu Gly Leu Ser Ser
      165      170

```

<210> 12
 <211> 168
 <212> PRT
 <213> Homo sapien

```

<400> 12
Asp Arg Glu Leu Pro Ser Ser Ala Thr Glu Ser Asp Gly Ser Pro Val
 1      5      10      15
Pro Ser Ser Gln Pro Ala Phe Pro Val Gln Ile Leu Pro Tyr Leu Tyr
      20      25      30
Leu Gly Cys Ala Lys Asp Ser Thr Asn Leu Asp Val Leu Gly Lys Tyr
      35      40      45
Gly Ile Lys Tyr Ile Leu Asn Val Thr Pro Asn Leu Pro Asn Ala Phe
      50      55      60
Glu His Gly Gly Glu Phe Thr Tyr Lys Gln Ile Pro Ile Ser Asp His
65      70      75      80
Trp Ser Gln Asn Leu Ser Gln Phe Phe Pro Glu Ala Ile Ser Phe Ile
      85      90      95
Asp Glu Ala Arg Ser Lys Lys Cys Gly Val Leu Val His Cys Leu Ala
      100      105      110
Gly Ile Ser Arg Ser Val Thr Val Thr Val Ala Tyr Leu Met Gln Lys
      115      120      125
Met Asn Leu Ser Leu Asn Asp Ala Tyr Asp Phe Val Lys Arg Lys Lys
      130      135      140
Ser Asn Ile Ser Pro Asn Phe Asn Phe Met Gly Gln Leu Leu Asp Phe
145      150      155      160
Glu Arg Thr Leu Gly Leu Ser Ser
      165

```

<210> 13
 <211> 170
 <212> PRT
 <213> Homo sapien

<400> 13

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Gly Leu Cys Glu Gly Lys Pro Ala Ala Leu Leu Pro Met Ser Leu Ser
 1          5          10          15
Gln Pro Cys Leu Pro Val Pro Ser Val Gly Leu Thr Arg Ile Leu Pro
          20          25          30
His Leu Tyr Leu Gly Ser Gln Lys Asp Val Leu Asn Lys Asp Leu Met
          35          40          45
Thr Gln Asn Gly Ile Ser Tyr Val Leu Asn Ala Ser Asn Ser Cys Pro
          50          55          60
Lys Pro Asp Phe Ile Cys Glu Ser Arg Phe Met Arg Val Pro Ile Asn
65          70          75          80
Asp Asn Tyr Cys Glu Lys Leu Leu Pro Trp Leu Asp Lys Ser Ile Glu
          85          90          95
Phe Ile Asp Lys Ala Lys Leu Ser Ser Cys Gln Val Ile Val His Cys
          100          105          110
Leu Ala Gly Ile Ser Arg Ser Ala Thr Ile Ala Ile Ala Tyr Ile Met
          115          120          125
Lys Thr Met Gly Met Ser Ser Asp Asp Ala Tyr Arg Phe Val Lys Asp
130          135          140
Arg Arg Pro Ser Ile Ser Pro Asn Phe Asn Phe Leu Gly Gln Leu Leu
145          150          155          160
Glu Tyr Glu Arg Thr Leu Lys Leu Leu Ala
          165          170

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<210> 14

<211> 168

<212> PRT

<213> Homo sapien

<400> 14

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Pro Ala Gln Ala Leu Pro Pro Ala Gly Ala Glu Asn Ser Asn Ser Asp
 1          5          10          15
Pro Arg Val Pro Ile Tyr Asp Gln Gly Gly Pro Val Glu Ile Leu Pro
          20          25          30
Tyr Leu Tyr Leu Gly Ser Cys Asn His Ser Ser Asp Leu Gln Gly Leu
          35          40          45
Gln Ala Cys Gly Ile Thr Ala Val Leu Asn Val Ser Ala Ser Cys Pro
          50          55          60
Asn His Phe Glu Gly Leu Phe His Tyr Lys Ser Ile Pro Val Glu Asp
65          70          75          80
Asn Gln Met Val Glu Ile Ser Ala Trp Phe Gln Glu Ala Ile Ser Phe
          85          90          95
Ile Asp Ser Val Lys Asn Ser Gly Gly Arg Val Leu Val His Cys Gln
          100          105          110
Ala Gly Ile Ser Arg Ser Ala Thr Ile Cys Leu Ala Tyr Leu Ile Gln
          115          120          125
Ser His Arg Val Arg Leu Asp Glu Ala Phe Asp Phe Val Lys Gln Arg
130          135          140
Arg Gly Val Ile Ser Pro Asn Phe Ser Phe Met Gly Gln Leu Leu Gln
145          150          155          160
Leu Glu Thr Gln Val Leu Cys His
          165

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<210> 15

<211> 169

<212> PRT

<213> Homo sapien

<400> 15
 Pro Leu Ser Thr Ser Val Pro Asp Ser Ala Glu Ser Gly Cys Ser Ser
 1 5 10 15
 Cys Ser Thr Pro Leu Tyr Asp Gln Gly Gly Pro Val Glu Ile Leu Pro
 20 25 30
 Phe Leu Tyr Leu Gly Ser Ala Tyr His Ala Ser Arg Lys Asp Met Leu
 35 40 45
 Asp Ala Leu Gly Ile Thr Ala Leu Ile Asn Val Ser Ala Asn Cys Pro
 50 55 60
 Asn His Phe Glu Gly His Tyr Gln Tyr Lys Ser Ile Pro Val Glu Asp
 65 70 75 80
 Asn His Lys Ala Asp Ile Ser Ser Trp Phe Asn Glu Ala Ile Asp Phe
 85 90 95
 Ile Asp Ser Ile Lys Asn Ala Gly Gly Arg Val Phe Val His Cys Gln
 100 105 110
 Ala Gly Ile Ser Arg Ser Ala Thr Ile Cys Leu Ala Tyr Leu Met Arg
 115 120 125
 Thr Asn Arg Val Lys Leu Asp Glu Ala Phe Glu Phe Val Lys Gln Arg
 130 135 140
 Arg Ser Ile Ile Ser Pro Asn Phe Ser Phe Met Gly Gln Leu Leu Gln
 145 150 155 160
 Phe Glu Ser Gln Val Leu Ala Pro His
 165

<210> 16
 <211> 169
 <212> PRT
 <213> Homo sapien

<400> 16
 Pro Val Pro Pro Ser Ala Thr Glu Pro Leu Asp Leu Gly Cys Ser Ser
 1 5 10 15
 Cys Gly Thr Pro Leu His Asp Gln Gly Gly Pro Val Glu Ile Leu Pro
 20 25 30
 Phe Leu Tyr Leu Gly Ser Ala Tyr His Ala Ala Arg Arg Asp Met Leu
 35 40 45
 Asp Ala Leu Gly Ile Thr Ala Leu Leu Asn Val Ser Ser Asp Cys Pro
 50 55 60
 Asn His Phe Glu Gly His Tyr Gln Tyr Lys Cys Ile Pro Val Glu Asp
 65 70 75 80
 Asn His Lys Ala Asp Ile Ser Ser Trp Phe Met Glu Ala Ile Glu Tyr
 85 90 95
 Ile Asp Ala Val Lys Asp Cys Arg Gly Arg Val Leu Val His Cys Gln
 100 105 110
 Ala Gly Ile Ser Arg Ser Ala Thr Ile Cys Leu Ala Tyr Leu Met Met
 115 120 125
 Lys Lys Arg Val Arg Leu Glu Glu Ala Phe Glu Phe Val Lys Gln Arg
 130 135 140
 Arg Ser Ile Ile Ser Pro Asn Phe Ser Phe Met Gly Gln Leu Leu Gln
 145 150 155 160
 Phe Glu Ser Gln Val Leu Ala Thr Ser
 165

<210> 17
 <211> 171
 <212> PRT

<213> Homo sapien

<400> 17

| | | | | | | | | | | | | | | | |
|------------|------------|------------|-----------|------------|-----|------------|------------|-----------|------------|------------|------------|------------|------------|-----------|------------|
| Ser 1 | Glu | Arg | Ala | Leu 5 | Ile | Ser | Gln | Cys | Gly 10 | Lys | Pro | Val | Val | Asn 15 | Val |
| Ser | Tyr | Arg | Pro 20 | Ala | Tyr | Asp | Gln | Gly 25 | Gly | Pro | Val | Glu 30 | Ile | Leu | Pro |
| Phe | Leu | Tyr 35 | Leu | Gly | Ser | Ala | Tyr 40 | His | Ala | Ser | Lys | Cys 45 | Glu | Phe | Leu |
| Ala | Asn 50 | Leu | His | Ile | Thr | Ala 55 | Leu | Leu | Asn | Val 60 | Ser | Arg | Arg | Thr | Ser |
| Glu 65 | Ala | Cys | Met | Thr 70 | His | Leu | His | Tyr | Lys 75 | Trp | Ile | Pro | Val | Glu | Asp 80 |
| Ser | His | Thr | Ala | Asp 85 | Ile | Ser | Ser | His | Phe 90 | Gln | Glu | Ala | Ile | Asp 95 | Phe |
| Ile | Asp | Cys 100 | Val | Arg | Glu | Lys | Gly 105 | Gly | Lys | Val | Leu | Val | His 110 | Cys | Glu |
| Ala | Gly 115 | Ile | Ser | Arg | Ser | Pro | Thr 120 | Ile | Cys | Met | Ala | Tyr 125 | Leu | Met | Lys |
| Thr | Lys 130 | Gln | Phe | Arg | Leu | Lys 135 | Glu | Ala | Phe | Asp | Tyr 140 | Ile | Lys | Gln | Arg |
| Arg 145 | Ser | Met | Val | Ser 150 | Pro | Asn | Phe | Gly | Phe | Met 155 | Gly | Gln | Leu | Leu | Gln 160 |
| Tyr | Glu | Ser | Glu | Ile 165 | Leu | Pro | Ser | Thr | Pro 170 | Asn | | | | | |

<210> 18

<211> 180

<212> PRT

<213> Homo sapien

<400> 18

[illegible]

<210> 19
 <211> 145
 <212> PRT
 <213> Homo sapien

<400> 19
 Met Gly Asn Gly Met Asn Lys Ile Leu Pro Gly Leu Tyr Ile Gly Asn
 1 5 10 15
 Phe Lys Asp Ala Arg Asp Ala Glu Gln Leu Ser Lys Asn Lys Val Thr
 20 25 30
 His Ile Leu Ser Val His Asp Ser Ala Arg Pro Met Leu Glu Gly Val
 35 40 45
 Lys Tyr Leu Cys Ile Pro Ala Asp Ser Pro Ser Thr Arg His Phe
 50 55 60
 Lys Glu Ser Ile Lys Phe Ile His Glu Cys Arg Leu Arg Gly Glu Ser
 65 70 75 80
 Cys Leu Val His Cys Leu Ala Gly Val Ser Arg Ser Val Thr Leu Val
 85 90 95
 Ile Ala Tyr Ile Met Thr Val Thr Asp Phe Gly Trp Glu Asp Ala Leu
 100 105 110
 His Thr Val Arg Ala Gly Arg Ser Cys Ala Asn Pro Asn Val Gly Phe
 115 120 125
 Gln Arg Gln Leu Gln Glu Phe Glu Lys His Glu Val His Gln Tyr Arg
 130 135 140
 Gln
 145

<210> 20
 <211> 687
 <212> DNA
 <213> Mus musculus

<400> 20
 cgagcgcgga cgcgacgcgg cgcgcccatg gggagtggga tgagccagat cctgccgggc 60
 ctgtacattg gcaacttcaa agacgcaaga gatgcagaac agttgagcag gaacaagggtg 120
 acacacattc tttctgtgca cgatactgcc aggcccatgt tggagggagt taaatacctg 180
 tgtattccag cggcagacac accatctcaa aacctgacaa gacatttcaa agaaagcatt 240
 aaattcattc atgagtgccg actccagggt gagagctgtc ttgtacattg cctggctggg 300
 gtctccagga gtgtgacatt ggtgatcgca tacatcatga ctgtcaccga ctttggctgg 360
 gaagatgcct tgcacactgt tctgtcgggg aggtcctgtg ccaaccccaa cctgggcttt 420
 caaaggcagc tgcaggagtt tgagaaacat gaagtgcacc agtatcggca atggctgaga 480
 gaagagtatg gagagaaccc tttgcgggat gcagaagaag ccaaaaatat tctgggtaaa 540
 tataaagagc aagggcgcat ggagccccg cctagcagca ggcggtggag cagcttctca 600
 accctgcctc ctctcaccta caataactac acaacagaga cctaacagag agagctggtg 660
 tctgccttcc tgctgcgggt cttctgg 687

<210> 21
 <211> 205
 <212> PRT
 <213> Mus musculus

<400> 21
 Met Gly Ser Gly Met Ser Gln Ile Leu Pro Gly Leu Tyr Ile Gly Asn
 1 5 10 15
 Phe Lys Asp Ala Arg Asp Ala Glu Gln Leu Ser Arg Asn Lys Val Thr
 20 25 30

His Ile Leu Ser Val His Asp Thr Ala Arg Pro Met Leu Glu Gly Val
 35 40 45
 Lys Tyr Leu Cys Ile Pro Ala Ala Asp Thr Pro Ser Gln Asn Leu Thr
 50 55 60
 Arg His Phe Lys Glu Ser Ile Lys Phe Ile His Glu Cys Arg Leu Gln
 65 70 75 80
 Gly Glu Ser Cys Leu Val His Cys Leu Ala Gly Val Ser Arg Ser Val
 85 90 95
 Thr Leu Val Ile Ala Tyr Ile Met Thr Val Thr Asp Phe Gly Trp Glu
 100 105 110
 Asp Ala Leu His Thr Val Arg Ala Gly Arg Ser Cys Ala Asn Pro Asn
 115 120 125
 Leu Gly Phe Gln Arg Gln Leu Gln Glu Phe Glu Lys His Glu Val His
 130 135 140
 Gln Tyr Arg Gln Trp Leu Arg Glu Glu Tyr Gly Glu Asn Pro Leu Arg
 145 150 155 160
 Asp Ala Glu Glu Ala Lys Asn Ile Leu Gly Lys Tyr Lys Glu Gln Gly
 165 170 175
 Arg Met Glu Pro Arg Pro Ser Ser Arg Arg Trp Ser Ser Phe Ser Thr
 180 185 190
 Leu Pro Pro Leu Thr Tyr Asn Asn Tyr Thr Thr Glu Thr
 195 200 205

<210> 22
 <211> 17
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> PCR primer

<400> 22
 atggggagtg ggatgag

17

<210> 23
 <211> 28
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> PCR primer

<400> 23
 gatgttattg atgtgttgct tctggatt

28

<210> 24
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> PCR primer

<400> 24
 ctattaatat gctgcctctg gatt

24

<210> 25

<211> 555
 <212> DNA
 <213> Homo sapien

<400> 25
 atggggaatg ggatgaacaa gatcctgccc ggctgtaca tcggcaactt caaagatgcc 60
 agagacgcgg aacaattgag caagaacaag gtgacacata ttctgtctgt ccacgatagt 120
 gccaggccta tgttggaggg agttaataac ctgtgcatcc cagcagcgga ttcaccatct 180
 caaaacctga caagacattt caaagaaagt attaaattca ttcacgagt cgggctccgc 240
 ggtgagagct gccttgtaca ctgcctggcc ggggtctcca ggagcgtgac actggtgatc 300
 gcatacatca tgaccgtcac tgactttggc tgggaggatg ccctgcacac cgtgcgtgct 360
 gggagatcct gtgccaaccc caacgtgggc ttccagagac agctccagga gtttgagaag 420
 catgaggtcc atcagtatcg gcagtggctg aaggaagaat atggagagag ccctttgcag 480
 gatgcagaag aagccaaaaa cattctggcc gctccaggaa ttctgaagtt ctgggccttt 540
 ctcagaagac tgtaa 555

<210> 26
 <211> 6
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Tyrosine phosphorylated peptide derived from EGF
 receptor which is used as a substrate for
 phosphatase activity.

<221> PHOSPHORYLATION
 <222> (5)...(5)

<400> 26
 Asp Ala Asp Glu Tyr Leu
 1 5